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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/729,907	12/04/2000	Michael Ralph Foster	DP-304486	7481

7590 07/01/2004
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EXAMINER

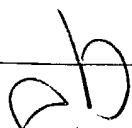
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ART UNIT PAPER NUMBER

1764

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 09/729,907	Applicant(s) FOSTER ET AL.	
	Examiner Hien Tran	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 22-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-31 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/4/00 & 2/2/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of group I, claims 1-21 in the reply filed on 4/9/04 is acknowledged. The traversal is on the ground(s) that the apparatus and the method are merely different aspects of a single invention. This is not found persuasive because the search required for group I is not required for group II as set forth in the previous office action.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 22-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4/9/04.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "85" (page 14, line 10); 51' (page 17, lines 14 and 18). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "82, 86" (Figs. 9-11, etc.). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to

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the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to because in Fig. 4 it is unclear as to why the first lip 12 and the gas inlet 16 are both pointed to the wall of the substrate 10; in Figs. 6 and 8 the gas inlets 36, 56 are pointed to the cell of the substrate; in Fig. 12, "62" should be changed to --22--; in Fig. 19 "85" should be pointed to the gap, not the shell 78; in Fig. 20, 85' should be pointed to the gap, not the shell 78. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

6. The drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the drawings to comply with CFR 1.84(p)(5), e.g. they should include the reference sign(s) mentioned in the specification and vice versa.

Specification

7. The disclosure is objected to because of the following informalities:

On page 17, line 12 "73" should be changed to --71-- (note page 12, line 26; page 15, line 7; Fig. 15).

Appropriate correction is required.

8. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

9. Claim 12 is objected to because of the following informalities:

In claim 12, lines 1-2 "further comprising" should be changed to --wherein-- and in line 2 "have" should be changed to --further comprises--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 10, 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 10, line 2 it is unclear as to how the U-shaped ring is related to the U-shaped attachment set forth in claim 9 and also "the U-shaped ring" lacks positive antecedent basis.

In claim 19, it is unclear as to how the mat support material is related to the mat support material set forth in claim 1.

In claim 20, it is unclear as to which mat support material is implied. See claim 21 likewise.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. The art area applicable to the instant invention is that of catalytic converter.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re Clinton* 188 USPQ 365, 367 (CCPA 1976) and *In re Thompson* 192 USPQ 275, 277 (CCPA 1976).

15. Claims 1-16, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vroman (3,978,567) in view of Umin et al (5,980,837).

Vroman discloses a catalytic converter comprising:

a catalyst substrate 13 comprising a catalyst, and having a first lip concentrically disposed about a first end of said catalyst substrate, a second lip concentrically disposed

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about a second end of said catalyst substrate, and an outer surface having at least one concentric structural feature 17 disposed therebetween, wherein an outer surface diameter is less than or equal to a first lip diameter;

a shell 11 having an opening, and concentrically disposed around said catalyst substrate; and

a first resilient support material 18 disposed between said catalyst substrate 13 and said shell 11, concentrically around said catalyst substrate 13, between said first lip and said structural feature 17.

The apparatus of Vroman is substantially the same as that of the instant claims, but is silent as to whether the resilient support may be a mat support material.

However, Umin et al discloses the conventionality of using either wire mesh or mat as a resilient support material.

Since both wire mesh and mat were art-recognized equivalents at the time the invention was made in compressively and securely holding the substrate, one of ordinary skill in the art would have found it obvious to select either type as a resilient support material in the apparatus of Vroman for the known and expected results of obtaining the same results in the absence of unexpected results as evidenced by Umin et al.

Vroman also discloses a second resilient support material 18 disposed between said second lip and said structural feature 17; a first and second shoulders disposed about the shell and the lips.

Vroman further discloses that the shell and the support material comprise at least one depressed annular area (Figs. 1 and 3).

Vroman discloses provision of end cones at the end of the shell (Fig. 1).

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With respect to the segment shape of the lip and the depressed area, note that the shape of the lips or depressed areas are not considered to confer patentability to the claim. It would have been an obvious matter of design choice to select an appropriate shape for the lips or depressed areas, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art, absence showing any unexpected results. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

16. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vroman (3,978,567) applied to claims 1-16, 18-20 above, and further in view of Gaysert (4,350,664).

Gaysert discloses provision of a mat protection ring.

It would have been obvious to one having ordinary skill in the art to provide a mat protection ring as taught by Gaysert in the modified apparatus of Vroman to protect the end of the mat thereof.

17. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vroman (3,978,567) applied to claims 1-16, 18-20 above, and further in view of Merry et al (4,865,818).

Merry et al discloses provision of a mat having a uniform mount density.

It would have been obvious to one having ordinary skill in the art to provide a uniform density for the mat as taught by Merry et al in the modified apparatus of Vroman to provide a more consistent performance for the converter.


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Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Hien Tran
Primary Examiner
Art Unit 1764**

HT
June 28, 2004